

Large-Scale AIDS Vaccine Test Delayed

The National Institutes of Health will not launch an expanded clinical trial of two AIDS vaccines, at least for now. National Institute of Allergy and Infectious Diseases Director Anthony S. Fauci made the decision late last week after hearing an independent panel's recommendation to postpone such a test until vaccine researchers gather additional data.

The panel, the AIDS Research Advisory Committee, held an all-day meeting to weigh the available evidence on two experimental AIDS vaccines. Both vaccines are based on genetically engineered versions of the predominant protein found on the surface of the AIDS virus: glycoprotein 120, or gp 120. One vaccine is manufactured by Genentech of South San Francisco, Calif. Biocine Co. of Emeryville, Calif., a joint venture between Chiron and CIBA-Geigy, produces the other.

The two vaccines are currently being tested in small, early-stage human trials. They have a similar design but are based on two distinct — though closely related — strains of HIV, the virus that causes AIDS.

After more than 8 hours of deliberations, the advisory group put on hold a larger AIDS vaccine trial. They called for more efficacy and safety data on these two vaccines and on other types of shields against the AIDS virus, such as bits of DNA from the AIDS virus that

would be introduced directly into the human body in order to provoke an immune response.

The panel reviewed data from animal and human studies. Both vaccines appear to protect chimpanzees from infection by a direct injection of HIV into the bloodstream. Yet similar vaccines fail to shield other primates, such as macaque monkeys, from the virus.

So far, human trials show that people at high risk of contracting AIDS who get the vaccines do produce antibodies, the infection-fighting proteins manufactured by specific immune cells. However, many scientists worry that such antibodies won't be enough to keep the AIDS virus at bay.

Indeed, a few people participating in the ongoing trials of gp 120 vaccines have become infected with HIV. Scientists quickly point out that those infections result from the risky behavior of participants — such as intravenous drug use — and not from the vaccine itself, which is a synthetic protein that cannot cause infection. Nobody knows whether such reports hint that the gp 120 vaccines cannot protect people from this tricky virus.

Many of those at high risk of developing AIDS remain suspicious of government attempts to test a vaccine — especially one whose benefits remain questionable — noted Derek Hodel, the

treatment and research director for the AIDS Action Council of Washington, D.C. And that reluctance may translate into problems recruiting enough volunteers for a very large vaccine trial.

Panel member Martin E. Delaney, executive director of Project Inform in San Francisco, noted that federal officials may get only one shot to launch such a study. "My message is, This is not that chance," Delaney said. If researchers can't recruit enough participants, they won't have the statistical power to determine an experimental vaccine's efficacy, he added.

For many panel members, the decision to proceed slowly did not come easily, given the devastation of the AIDS pandemic. "This is a very difficult decision for me," said William T. Shearer, an immunologist at Baylor College of Medicine in Houston, who called the data on the two vaccines "disappointing."

In the end, the panel (and Fauci) found the scientific evidence too weak to support a very costly, expanded trial of the two vaccines.

"I don't think it's a setback for vaccine research," Fauci said after the meeting. He noted that several other promising AIDS vaccines remain under investigation. Fauci predicts that within 2 to 3 years researchers will have enough information to begin wide-scale testing of such vaccines. — K.A. Fackelmann

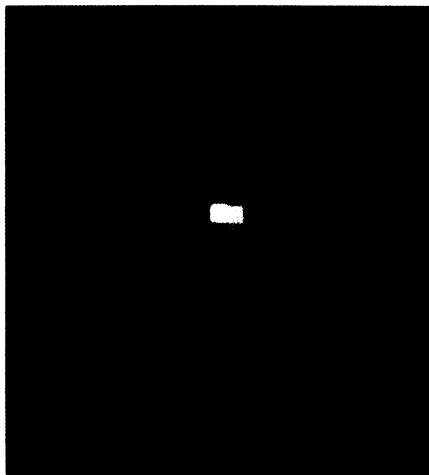
Gap in a stellar disk hints at planet

Ever since its discovery in 1984, astronomers have considered a dusty disk around the Milky Way star Beta Pictoris as a prime birthplace for planets. They believe that some of the dust will merge to form planets, just as dust around the young sun is thought to have done.

French astronomers have now taken the highest-resolution infrared images ever of Beta Pictoris' disk, which lies 50 light-years from Earth. In analyzing the images, they find that the inner part of the disk is nearly free of dust — a hint that the gravitational pull of one or more unseen planets with a total mass several times that of Earth has swept away the material.

Pierre-Olivier Lagage and Eric Pantin of the Service d'Astrophysique in Gif-sur-Yvette report their work in the June 23 NATURE.

Researchers have long suspected that the inner portion of the disk has a gap. But in both visible light and the near-infrared, the star vastly outshines the glow from surrounding dust, making it hard to probe the disk's interior.



Sharpest infrared image ever taken of the disk surrounding Beta Pictoris.

Using state-of-the-art electronic detectors at the European Southern Observatory's 3.6-meter telescope in La Silla, Chile, the astronomers observed the Beta Pictoris system at 10 micrometers — an infrared wavelength at which

the dust and the star have equal brightness. The inner disk has a radius roughly equal to the distance between the sun and Pluto. Their portrait reveals features one-eighth that size.

The raw images don't show a core region barren of dust. In fact, the innermost part of the disk is slightly brighter. But the astronomers realized that the glow from the part of the disk nearest the hot star was produced by a considerably smaller amount of dust radiating at a higher temperature.

They calculate that within half the radius of the inner disk, the dust density is only one-tenth that of outlying regions. Lagage and Pantin suggest that a planet could have produced this dust "gap." They also note that the asymmetry between opposite ends of the disk indicates that a planet orbits the star in an elliptical path.

"Although pleasing, this explanation is far from ironclad," comments Charles M. Telesco of NASA's Marshall Space Flight Center in Huntsville, Ala. But, he adds, "The new infrared images demonstrate a powerful new probe for possible planetary systems." — R. Cowen